CLAIMS

1. An isolated polypeptide characterized by:
   a. having a molecular weight of 46 kD as determined by reducing SDS-PAGE;
   b. having serine and threonine kinase activity; and
   c. phosphorylating the c-Jun N-terminal activation domain.

2. An isolated polynucleotide sequence encoding the polypeptide of claim 1.

3. A host cell containing the polynucleotide of claim 2.

4. A recombinant expression vector containing the polynucleotide of claim 2.

5. The vector of claim 4, which a virus.

6. The vector of claim 5, wherein the virus is an RNA virus.

7. The vector of claim 6, wherein the RNA virus is a retrovirus.

8. The vector of claim 4, wherein the vector is a plasmid.

9. Antibodies which bind to the polypeptide of claim 1, or fragments thereof.

10. The antibodies of claim 9, wherein the antibodies are polyclonal.

11. The antibodies of claim 9, wherein the antibodies are monoclonal.

12. A method for identifying a composition which affects a c-jun N-terminal kinase which comprises:

a. incubating components comprising the composition and the kinase or polynucleotide encoding the kinase, wherein the incubating is carried out under conditions sufficient to allow the components to interact; and

b. measuring the effect of the composition on the kinase or polynucleotide encoding the kinase.

13. The method of claim 12, wherein the kinase is the polypeptide of claim 1.

14. The method of claim 12, wherein the effect is inhibition of the kinase.

15. The method of claim 12, wherein the effect is stimulation of the kinase.

16. The method of claim 12, wherein the polynucleotide is the polynucleotide of claim 2.

17. The method of claim 12, wherein the composition is an immunosuppressing agent.

18. An isolated synthetic peptide comprising SEQ ID NO: 1 and conservative variations thereof.

19. The peptide of claim 18, wherein the peptide binds to the c-Jun N-terminal kinase, JNK.

20. A polynucleotide encoding the peptide of claim 18.

21. An antibody which binds to the amino acid sequence of SEQ ID NO: 1.

22. The antibody of claim 21, wherein the antibody is polyclonal.

23. The antibody of claim 21, wherein the antibody is monoclonal.

24. A method of treating a cell proliferative disorder associated with c-jun N-terminal kinase comprising administering to a subject with the disorder, a therapeutically effective amount of reagent which modulates the kinase activity.

25. The method of claim 24, wherein the reagent is an antisense polynucleotide sequence.

26. The method of claim 24, wherein the reagent is an antibody.

27. The method of claim 26, wherein the antibody is monoclonal.

28. The method of claim 24, wherein the reagent is an antibody which binds to the synthetic peptide of SEQ ID NO: 1.

29. The method of claim 24, wherein the reagent is a synthetic peptide with the amino acid sequence of SEQ ID NO: 1, and conservative variations thereof.

30. The method of claim 24, wherein the reagent is an anti-idiotype antibody.

31. The method of claim 30, wherein the anti-idiotype antibody binds to a paratope of an antibody which binds to the amino acid sequence of SEQ ID NO: 1.

32. The method of claim 24, wherein the cell proliferative disorder is selected from the group consisting of ischemic heart disease, leukemia, rheumatoid arthritis, colon cancer, renal-cell carcinoma, prostate cancer, non-small cell carcinoma of the lung, cancer of the small intestine, cancer of the esophagus, acquired immune deficiency syndrome, vasculitis, and immunopathological disorders.

33. A method for identifying a cell with c-Jun N-terminal kinase activity comprising contacting a cell component associated with c-Jun N-terminal kinase activity with a reagent which binds to the component and measuring the interaction of the reagent with the component.

34. The method of claim 33, wherein the component is nucleic acid.

35. The method of claim 34, wherein the nucleic acid is RNA.

36. The method of claim 33, wherein the component is protein.

37. The method of claim 33, wherein the reagent is a probe.

38. The method of claim 37, wherein the probe is nucleic acid.

39. The method of claim 37, wherein the probe is a protein.

40. The method of claim 39, wherein the protein is a c-Jun protein.

41. The method of claim 40, wherein the c-Jun protein is a fusion protein.

42. The method of claim 41, wherein the fusion protein consists of c-Jun and glutathione-S-transferase (GST).

43. The method of claim 37, wherein the probe is an antibody.

44. The method of claim 43, wherein the antibody is monoclonal.

45. The method of claim 37, wherein the probe is detectably labeled.

46. The method of claim 45, wherein the label is selected from the group consisting of a radioisotope, a bioluminescent compound, a chemiluminescent compound, a fluorescent compound, a metal chelate, or an enzyme.

47. A kit useful for the detection of a c-Jun N-terminal kinase comprising an antibody which binds to the c-Jun N-terminal kinase, the kit comprising a carrier means being compartmentalized to receive in close confinement therein one or more containers, comprising a container containing a probe specifically reactive with the antibody.

48. The kit of claim 47, wherein the probe is an antibody.

49. The kit of claim 48, wherein the antibody is detectably labeled.

50. An isolated polypeptide characterized by:

a. having a molecular weight of 55 kD as determined by reducing SDS-PAGE;

b. having serine and threonine kinase activity; and

c. phosphorylating the c-Jun N-terminal activation domain.

51. An isolated polynucleotide sequence encoding the polypeptide of claim 50.